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TROPICAL FOREST NOTES

TROPICAL FOREST RESEARCH CENTER *
RIO PIEDRAS, PUERTO RICO



THE SERVICE LIFE OF UNTREATED POSTS IN PUERTO RICO AFTER ONE YEAR IN TEST

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In April 1959, treated and untreated posts of the more common species in Puerto Rico were set in the ground to determine their service life. A total of 52 tree species and one bamboo species were set at the Cambalache Forest which is located in the north central part of the Island near sea level, and 10 species were set at the Guavate Forest, in the southeastern part of the Island at an elevation of 2300 feet. Twenty duplicate posts of a treatment were set at each location^{1/}. All posts were 6 feet long with a top diameter of two to three inches. They were peeled and set 18 inches in the ground. This note gives the condition of the posts after one year of service life.

No deterioration was observed in any of the treated posts after one year, but many of the untreated posts had failed. While it is generally known that untreated posts of most species last only a year or two, their relative rating and actual service life have not been determined. This information should prove useful to farmers and others interested in determining the service life of fences constructed of untreated posts.

Information was obtained on the condition of all posts at three month's intervals. All twenty replicate posts of a few species failed within a year's time, and the service life shown for them was the actual life. The estimated service life of those species with four to nineteen failures was obtained from mortality tables. The average service life is not shown for those species with three failures or less.

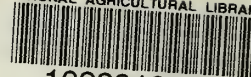
Decay fungi was responsible for most of the failures and the deterioration of the still serviceable posts, although termites contributed to these failures and deterioration at Cambalache. No termite attack was observed in any post at Guavate. Termites apparently are less common in the high rainfall areas of the mountains, and the absence of termites at Guavate may contribute to the fact that some species there have a slightly longer service life than similar species set at Cambalache.

The density of the various species, in pounds per cubic foot, and based on air-dry weight and volume at approximately 18 percent moisture content, is given in the table to show its relationship to service life. Density was not a criterion of service life, except that very light-wooded species failed within one year.

^{1/} A summary of the results of the treatments is given in the Tropical Forest Note No. 2 "Preservation of Puerto Rican Fence Posts Treated by Cold Soaking and the Hot-and-Cold Bath Method", January, 1960.

* Operated in cooperation with the University of Puerto Rico.

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Table 1.--Condition of untreated six-foot posts with top diameters from 2.1 to 3.1 inches after 1 year exposure at the Cambalache and Guavate Forests, Puerto Rico

Common name	Species	Scientific name	Estimated : average : life	: Density : 1/	Condition of posts							
					Removed because of	Decay &	Serviceable but affected by	Decay &	Termite	Decay &	Termite	Decay &
			year	lbs/ft ³	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
SET AT CAMBALACHE												
Almácigo	Bursera	simaruba (L.) Sarg.	.6	20	90	0	10	--	--	--	--	--
Yagrumo hembra	Cecropia	peltata L.	.7	17	70	0	30	--	--	--	--	--
Achiotillo	Alchornea	latifolia Sw.	.9	26	50	0	50	--	--	--	--	--
Palo de gallina	Alchorneopsis	portoricensis Urban	.9	26	80	0	20	--	--	--	--	--
Muñeco	Cordia	borinquensis Urban	.9	38	40	0	60	--	--	--	--	--
Moral	Cordia	sulcata DC.	.9	32	35	0	55	10	0	0	0	0
Yagrumo macho	Didymopanax	morototoni (Aubl.) Dec. & Pl.	.9	21	65	0	35	--	--	--	--	--
Tulipán africano	Spathodea	campanulata Beauv.	1.0	17	75	0	20	5	0	0	0	0
Espino rubial	Zanthoxylum	martinicense (Lam.)	1.1	33	40	0	45	5	0	0	5	5
Rabo de ratón	Casearia	arborea (L. C. Rich.) DC.	1.1	43	60	0	30	5	0	0	5	5
Laurel avispollo	Nectandra	coriacea (Sw.) Griseb.	1.2	33	35	0	35	5	5	5	10	10
Tabaiba	Sapium	laurocerasus Desf.	1.2	35	10	5	65	5	0	0	10	10
Cassia de Siam	Cassia	siamea Lam.	1.3	42	30	0	30	20	10	5	5	5
Guaragüao	Guarea	trichilioides L.	1.3	34	30	0	35	20	0	0	10	10
Mangle blanco	Laguncularia	racemosa (L.) Gaertn. f.	1.3	44	10	20	30	5	20	15	15	15
Manteguero	Rapanea	ferruginea (Ruiz & Pav.) Mez	1.3	42	5	0	55	0	15	20	20	20
Casuarina	Casuarina	equisetifolia L.	1.4	57	15	0	35	15	10	25	25	25
Jagüey	Ficus	laevigata Vahl	1.4	34	30	0	20	30	0	5	5	5
Palo de matos	Ormosia	Krugii Urban	1.4	35	20	0	30	10	15	20	20	20
Laurel geo	Ocotea	leucoxydon (Sw.)	1.4	31	15	0	35	5	0	25	25	25
Moca	Andira	inermis (W. Wright) H.B.K.	1.5	45	25	0	20	25	15	5	5	5
Granadillo	Buchenavia	capitata (Vahl) Eichl.	1.5	41	25	5	10	20	10	5	5	5
Bambú	Bambusa	vulgaris Schrad.	1.5	--	40	0	5	40	0	0	0	0
Sabinón	Croton	poecilanthus Urban	1.5	43	10	0	30	10	15	25	25	25
Tabonuco	Dacryodes	excelsa Vahl	1.5	35	10	5	20	25	10	5	5	5
Pomarrosa	Eugenia	jambos L.	1.5	45	10	0	35	5	15	25	25	25
Eucalyptus	Eucalyptus	robusta J. A. Smith	1.5	33	15	5	5	10	20	20	20	20
Guaba	Inga	vera Willd.	1.5	40	25	0	15	25	10	20	20	20
Masa	Tetragastris	balsamifera (Sw.) Kuntze	1.5	44	15	0	20	0	15	40	40	40
Cacao motillo	Sloanea	berteriana Choisy	1.6	53	15	0	15	5	15	25	25	25
Uvilla	Coccoloba	diversifolia Jacq.	1.7	46	15	5	5	20	20	15	15	15
Aguacatillo	Meliosma	herbertii Rolfe	1.7	30	25	0	0	30	5	0	0	0
Almendra	Terminalia	catappa L.	1.7	32	5	0	20	35	5	10	10	10
María	Calophyllum	brasiliense Camb.	1.8	38	0	0	20	20	20	20	20	20
Péndula	Citharexylum	fruticosum L.	1.8	46	10	0	10	20	0	30	30	30
Guamá	Inga	laurina (Sw.)	1.8	45	5	0	15	35	10	20	20	20
Teca	Tectona	grandis L. f.	1.8	35	10	0	10	20	10	10	10	10
Mangle colorado	Rhizophora	mangle L.	--	52	0	0	5	50	0	5	5	5
Roble	Tabebuia	heterophylla (DC.) Brit.	--	41	0	0	0	30	10	10	10	10
Capé blanco	Petitia	domingensis Jacq.	--	49	0	0	0	10	10	0	0	0
Mangle prieto	Avicennia	nitida Jacq.	--	53	0	0	0	10	20	10	10	10
Maricao	Byrsonima	spicata (Cav.) Rich.	--	44	5	0	0	10	10	5	5	5
Camasey jusillo	Calycogonium	squamulosum Cogn.	--	49	0	0	0	25	25	0	0	0
Cucubano	Guettarda	scabra (L.) Vent.	--	47	0	0	15	25	10	30	30	30
Caracolillo	Homalium	racemosum Jacq.	--	50	5	0	0	25	0	20	20	20
Hueso blanco	Linociera	domingensis (Lam.)	--	53	0	0	10	25	5	0	0	0
Ausubo	Manilkara	bidentata (A. DC.) Chev.	--	54	0	0	0	15	25	25	25	25
Hoja menuda	Myrcia	coriacea DC	--	44	0	0	10	20	20	15	15	15
Negra lora	Matayba	domingensis (D. S.) Radlk.	--	47	0	0	0	30	10	5	5	5
Caimitillo verde	Micropholis	garcinifolia Pierre	--	48	0	0	5	10	5	5	5	5
Caimitillo	Micropholis	chrysophylloides Pierre	--	52	10	0	0	20	20	25	25	25
Camasey blancó	Miconia	spp.	--	48	15	0	0	15	5	10	10	10
Cieneguillo	Myrcia	deflexa (Poir.) DC.	--	59	0	0	0	35	5	5	5	5
SET AT GUAVATE												
Rabo de ratón	Casearia	arborea (L. C. Rich.)	1.1	43	90	0	0	10	0	0	0	0
Pomarrosa	Eugenia	jambos L.	1.5	45	35	0	0	55	0	0	0	0
Mangle blanco	Laguncularia	racemosa (L.) Gaertn. f.	1.5	44	45	0	0	50	0	0	0	0
Laurel geo	Ocotea	leucoxydon (Sw.)	1.6	31	30	0	0	55	0	0	0	0
Guaba	Inga	vera Willd.	1.7	40	25	0	0	65	0	0	0	0
Casuarina	Casuarina	equisetifolia L.	--	57	15	0	0	75	0	0	0	0
Guamá	Inga	laurina (Sw.)	--	45	15	0	0	80	0	0	0	0
Hoja menuda	Myrcia	coriacea DC	--	44	5	0	0	30	0	0	0	0
Camasey blanco	Miconia	spp.	--	48	15	0	0	25	0	0	0	0
Roble	Tabebuia	heterophylla (DC.) Brit.	--	41	5	0	0	50	0	0	0	0

1/ Air dry weight and volume at approximately 18 percent moisture content.